

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
6 December 2001 (06.12.2001)

PCT

(10) International Publication Number  
**WO 01/91600 A2**

(51) International Patent Classification<sup>7</sup>: **A45D 40/00**

**KALLA, Karen, K.**; 653 Rushton Road, Cincinnati, OH 45226 (US).

(21) International Application Number: **PCT/US01/17089**

(22) International Filing Date: **25 May 2001 (25.05.2001)**

(74) Agents: **REED, T., David et al.**; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
**09/583,431** **31 May 2000 (31.05.2000)** **US**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

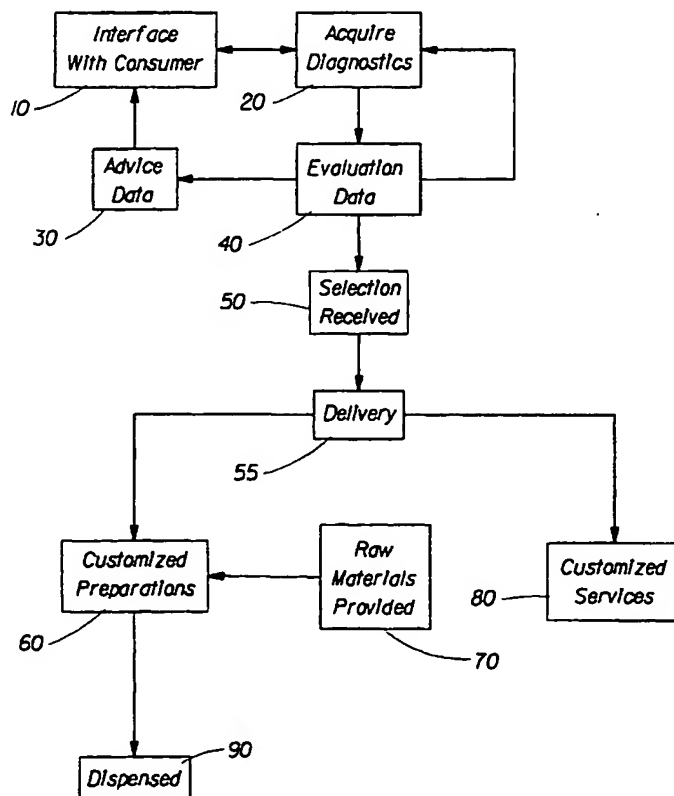
(71) Applicant: **THE PROCTER & GAMBLE COMPANY**  
[US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).

(72) Inventors: **BARFORD, Brian, D.**; 8002 Quail Hollow Court, West Chester, OH 45069 (US). **SWART, Ryan, K.**; 6475 Walden Pond Circle, Hamilton, OH 45011 (US).

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian

[Continued on next page]

(54) Title: **METHODS AND SYSTEM FOR PROVIDING PERSONALIZED PREPARATIONS**



(57) Abstract: Methods and a system are provided for personalizing cosmetic preparations and services for a consumer. Cosmetic diagnostic data is received from a consumer directly and in a private setting, a cosmetic evaluation is provided based on the diagnostic data, and at least one of a cosmetic preparation and a cosmetic service is provided to the consumer. Further, a method of purchasing cosmetic preparations is provided wherein a consumer provides cosmetic diagnostic data, and a plurality of fluids are provided for producing a customized cosmetic preparation based on the cosmetic diagnostic data, payment is received for the preparation, and the preparation is dispensed for application.

WO 01/91600 A2

BEST AVAILABLE COPY



patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

- *without international search report and to be republished upon receipt of that report*

## **METHODS AND SYSTEM FOR PROVIDING PERSONALIZED PREPARATIONS**

### **FIELD OF THE INVENTION**

5           The present invention relates to methods and systems for providing a consumer with personalized beauty care cosmetic preparations.

### **BACKGROUND OF THE INVENTION**

10           Cosmetic preparations such as sun screens, skin creams, fragrances, shaving creams, toiletries, nail products, deodorants, shampoos, conditioners, hair sprays, mousses, oils, vitamins, antibacterial mixtures, anti-acne mixtures, dermatology mixtures, pharmaceutical mixtures, mascara, facial foundation, lipstick, hair dyes, creams, cleansers, and the like have long been used by consumers to aesthetically  
15           enhance their physical appearance and self esteem, treat ailments, and cleanse themselves. The selection of an optimal product from a broad range of choices is a dilemma for consumers. Moreover, the consumer cannot make his/her choice in a private and comfortable setting while selecting his/her product in a retail establishment. Further, once the choice is made, the consumer is committed to his/her choice until the  
20           product is either consumed or discarded. This commitment does not permit subsequent flexibility in mood, expected social situation, skin condition, and the like. Also, the consumer may be dissatisfied with the impression a product has, either as a result of his/her own perception or as communicated by another. Consequently, most consumers have a vast array of unused products in their homes. These unused products often have  
25           expiration dates, which are rarely acknowledged by the consumer and, therefore, create potential health hazards to the consumer.

          Past approaches to cosmetic personalization have focused on the point of sale occurring in the retail establishment. For example, methods permit a salesperson to manually adjust the formulation of facial foundations so as to match the consumer's skin  
30           color. More recent approaches have advanced this idea by providing automatic cosmetic dispensing devices at a retail establishment. These more recent devices are

operated by retail store personnel to produce a product which is packaged in a container and provided to the consumer.

Although the abovementioned approaches partially address a consumer's need for personalization, there are several significant disadvantages. For example, these approaches assume that a consumer will not change his/her mind, regarding the purchased product, on a frequent basis after using the product. Under either approach listed above, a change of mind on the consumer's part requires him/her to repurchase another entire container of cosmetic product. Further, the consumer must physically visit the retail establishment and again make selections in a public setting. These approaches are inconvenient, expensive and still result in significant cosmetic inventory at the consumer's home. Moreover, the expiration dates associated with the consumer's cosmetic inventory will often expire before the consumer ever finishes the product.

Furthermore, existing point of sale cosmetic dispensing devices fill a container with a cosmetic product, requiring the product to be transferred onto an applicator prior to use by the consumer. For example, point of sale customized facial cream is typically provided in a bottle at the retail establishment. Prior to the consumer using the customized facial cream, the cream must be transferred to the consumer's hand or onto a pad where it is subsequently applied by the consumer. If the consumer is unhappy with the customized facial cream, the entire bottle of cream remains unused because, existing devices do not permit dispensing a single application quantity of the facial cream onto an intermediate surface for a single application by the consumer.

Moreover, consumers desire more decision power with respect to cosmetic services. These decisions need to be directly made by the consumer, existing methods and systems require the consumer to rely on an intermediary during the process of customizing a cosmetic or a cosmetic service. Therefore, any environment wherein the consumer is directly providing cosmetic diagnostic data and receiving evaluation data in an effort to assist the consumer with more decision power prior to selecting and purchasing cosmetic preparations and cosmetic services is desirable.

Finally, the current delivery of cosmetic preparations are limited to preparations which consist of stable, compatible and microbial resistant compositions, this is so because some compositions cannot be stored for any extended period of time or delivered

with certain attributes such as when warmed or heated. By delivering customized cosmetic preparations for single use applications many of these otherwise prohibitive aspects of preparing and delivering preparations which are incompatible or otherwise unstable are removed. accordingly, by altering the delivery and dispensing of cosmetic preparations new and improved cosmetic preparations may be created and provided to the consumer.

### SUMMARY OF THE INVENTION

Accordingly, an object of the invention is to provide consumers with methods and a system for receiving customized cosmetic preparations and services.

Additional objectives, advantages and novel features of the invention will be set forth in the description that follows and, in part, will become apparent to those skilled in the art upon examining or practicing the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims. To achieve the foregoing and other objects and in accordance with the purpose of the present invention, methods and a system are provided for providing customized cosmetic preparations and services to a consumer.

A method of providing personalized cosmetics is provided, comprising acquiring cosmetic diagnostic data from a consumer in a private setting and providing evaluation data based on the diagnostic data to the consumer. Next, at least one of a cosmetic preparation and a cosmetic service is delivered to the consumer.

Further, a method of purchasing cosmetic preparations is provided, comprising receiving diagnostic data from a consumer and providing a plurality of fluids for producing a cosmetic preparation based on the diagnostic data. A payment is received from the consumer, and the customized cosmetic preparation is dispensed for application.

Moreover, a system for producing customized cosmetics is provided, comprising a cosmetic diagnostic device, a cosmetic evaluation device, and a cosmetic delivering device operative to deliver at least one of a customized cosmetic preparation and cosmetic advice data to a consumer.

Finally, a method of providing personalized cosmetics is provided, comprising receiving directly from the consumer cosmetic diagnostic data, providing cosmetic evaluation data based on the diagnostic data and delivering at least one of a cosmetic preparation and a cosmetic service directly to the consumer.

5 Still other aspects of the present invention will become apparent to those skilled in the art from the following description of a preferred embodiment, which is by way of illustration, one of the best modes contemplated for carrying out the invention. As will be realized, the invention is capable of other different and obvious aspects, all without departing from the invention. Accordingly, the drawings and descriptions are illustrative  
10 in nature and not restrictive.

**BRIEF DESCRIPTION OF THE DRAWINGS** The accompanying drawings, incorporated in and forming part of the specification, illustrate several aspects of the present invention and, together with their descriptions, serve to explain the principles of  
15 the invention. In the drawings:

Fig. 1 depicts a flow diagram of a method of providing personalized cosmetic;

Fig. 2 depicts a flow diagram of a method of purchasing cosmetics;

Fig. 3 depicts a block diagram of a system for providing customized cosmetics;

Fig. 4 depicts a schematic of a customized cosmetic device;

20 Fig. 5 depicts a schematic of an alternative customized cosmetic device;

Fig. 6 depicts an internal schematic of a customized cosmetic device; and

Fig. 7 depicts an internal schematic view of an customized cosmetic device.

Reference will now be made to the present preferred embodiment of the invention,  
25 an example of which is illustrated in the accompanying drawings, wherein like numerals indicate the same element throughout the views.

### **DETAILED DESCRIPTION**

An exemplary embodiment of the present invention is implemented using  
30 standard mechanical pumps, mixing devices, heaters, dispensers, microprocessors, and cosmetic ingredients well known in the art and readily combinable in accordance with the

present invention. Moreover, basic software programming techniques and web-enabled technologies such as Java, Perl, C, C++, and the like provide software programming languages that may be used to implement the present invention, although as one skilled in the art will appreciate other computer languages and technologies exist which may be used to implement the present invention.

Fig. 1 depicts a flow diagram of one embodiment for a method of providing personalized cosmetic. Initially, an interface is provided to a consumer in step 10 wherein the consumer provides diagnostic data and makes selections with respect to cosmetic preparations and services. This interface may be in person, over the telephone, over the Internet (using standard Internet protocols such as TCP/IP, and the like), regular postal mail, through appliances equipped with a software logic to communicate cosmetic diagnostic data, electronic mail (e-mail), photographs from cameras or videos, special devices designed to collect cosmetic data (probes such as spectrophotometer, corneometer, colorimeter, thermometer, and the like), cosmetic advisors (in person or electronically assigned to a consumer), and the like. Furthermore, the interface is in a private setting such as a consumer's home, a device directly operated by a consumer, a non-retail establishment, and the like. A non-retail establishment includes any establishment other than a traditional cosmetic counter located in a department store. Therefore, a device located in a mall, hotel, bar, gas station, airplane, amusement park, restaurant, and others would still be considered a non-retail establishment as long as the device was not located at a traditional cosmetic counter in a store. However, even when a device is located at the traditional cosmetic counter, as long as the device is directly operated by the consumer, as opposed to cosmetic counter personnel, the device would still be within a private setting.

In step 20 diagnostic data are acquired from the consumer via the interface, these data include personal preferences (favorite colors, fragrances, and the like), skin or color measurements (obtained from cameras, videos, probes, medical records, and the like), health monitoring data (blood pressure, temperature, weight, and the like), inputs provided from an advisor (obtained from medical doctors, beauty consultants, personal trainers, parents, fashion consultants, teachers, and the like), electronic data (obtained from daily planners, calendars, important dates, weather conditions, preferences of

famous individuals, preferences of friends, preferences of family, fashion trends, and the like), feedback loops (obtained from questions asked the consumer, past choices, changes to previous cycles, changes based on visualization of output choices, and the like), and others. Moreover, diagnostic data may be acquired from devices which are used to interface with the consumer, such diagnostic data may include, by way of example only, supply levels of raw materials, device maintenance needs, installation inputs, and the like. Furthermore, these data may include skin or hair condition data (physical skin state, skin/hair dryness, skin/hair oiliness, and the like), texture measures (pores, wrinkles, and the like), color data (lightness data, chroma data, hue data, and spectral data), and the like.

As indicated in step 10, these diagnostic data may be communicated via a variety of methods. Once diagnostic data are collected initially, evaluation data is provided to the consumer in step 40. Evaluation data may include providing the diagnostic data to advisors such as medical/dental professionals, cosmetologists, beauty consultants, personal trainers, and the like. Additionally, evaluation data may be stored as data constants in an electronic system which identify personal preferences of famous individuals, family, friends, popular cosmetic choices, and the like. Evaluation data also may be standard computer algorithms which take color, condition, texture, and other measurements from a consumer directly, or indirectly, and produces a visual selection for the consumer.

Further, the evaluation data may be processed by a sales representative in a store, telephonically, or door-to-door, consumer software, remote software, and the like. Once the evaluation data is determined it is provided as a feedback loop to any diagnostic device used and may provide advice data to the consumer in step 30. Moreover, the advice data may provide executable instructions to a customized cosmetic preparation device (described below) informing the device or the percent of raw materials necessary to produce a cosmetic preparation, the mixing times, mechanical pump speeds, and the like. Furthermore, advice data may include application tips, instructions, device selection parameters, and the like.

In step 50, a consumer makes a selection for a cosmetic preparation or service. This selection may be made with the aid of a visualization device displaying to the



consumer the evaluation data. During selection, the consumer may modify and essentially override any evaluative data provided, thereby selecting cosmetic preparations and service not suggested by the evaluation data. In this way, the consumer maintains the final decision making authority with respect to his/her cosmetic choices.

5           The consumer is delivered a cosmetic preparation or service in step 55. The cosmetic preparation may be any mixture produced from the diagnostic data and evaluation data used by the consumer, a consumer may include chemists, pharmacists, and the like. Delivery of the customized preparation may be made directly to a desired body location of a consumer, such as a finger nail, hair, and the like. Moreover, the preparation may be delivered to an intermediate surface such a consumer's finger, an applicator, and the like. Additionally, the preparation may be delivered to a container such as a bottle, a bag, and the like. Customized preparations may be directly dispensed in step 90, in such case these preparations are exemplarily provided by customized cosmetic dispensing devices such as the ones discussed below, although as one skilled in 10 the art will appreciate other devices are possible. Also, the preparations may be delivered via mail, or via electronic email (e.g. digital information used by devices within the consumers household to dispense cosmetics and fragrances directly to the consumer). Further, the information about how to prepare these preparations may be directly provided to the consumer via any electronic means either directly to the consumer or indirectly to a consumer's appliance. Any such device/appliance delivering a cosmetic preparation will need raw materials which are provided in step 70. The raw materials are exemplarily provided as single or multi ingredient fluids wherein each fluid includes different/various or single ingredients.

          In addition to cosmetic preparations, a consumer may receive cosmetic services as 25 illustrated in step 80. These services include product recommendations, referrals to professionals, automatic reordering of device raw materials, automatically reordering of previously selected cosmetic preparations, communication with consumer appliances (consumer alarm clock or coffee pot set and the like), electronic dialogues with professionals, web-site recommendations, and the like.

30           Although Fig. 1, illustrates delivery of a cosmetic preparation after receiving diagnostic data from a consumer, a cosmetic preparation may actually initiate the

diagnostic and evaluation process such that a consumer is initially presented with a sample which is then used as a basis for interacting with the consumer to deliver a consumer developed customized preparation. Moreover, diagnostic data may be measured in a variety of ways including having the consumer compare various preparation samples and selecting the most appealing sample.

In Fig. 2 illustrates a flow diagram of one embodiment for a method of purchasing cosmetics. Initially, in step 100 an interaction is established with a consumer, this interaction is an interface as discussed in Fig. 1. Diagnostic data is received in step 110, advisors are provided in step 120. These advisors may be electronic advisors as for example software implemented algorithms or real advisors where a consumer is contacted either electronically or in person by a professional advisor. A consumer is provided with evaluation data in step 140 and advice data in step 130. The consumer makes a selection for a specific cosmetic preparation or service in step 150, and payment is received from the consumer in step 160.

Payment received from the consumer is exemplarily provided via a kiosk device wherein a consumer provides diagnostic data and receives evaluation data through a feedback loop implemented with a software logic. Prior to selection of a specific cosmetic preparation or cosmetic service, the consumer pays directly for the preparation or the service by directly providing the device or method with a payment means. For example in the case of kiosk, the consumer may use a credit/debit card or cash to pay for a service of providing a cosmetic or service, and in the case of remote access a consumer may provide a credit card or bank account number or other convenient payment methods within which payment may be acquired for the product or service.

The cosmetic dispenser is activated in step 170 and the preparation is dispensed in step 190. Any device dispensing the preparation is provided fluids in step 180 which are mixed in accordance with the selection made by the consumer to produce the desired cosmetic preparation.

Fig. 3 illustrates a block diagram of one embodiment for a system 200 that provides customized cosmetics. An input interface 210 is provided which permits a consumer to directly interface either electronically, manually, or in person with the system of step 200. A diagnostic device 220 collects from the consumer diagnostic data,

as described above, which are used by an evaluation device 23. Optionally, a consumer may pay to receive a cosmetic preparation or service via a payment device 240 (e.g. kiosk). The consumer makes the final decision on which cosmetic preparations or services he/she receives via a selection device 270 (e.g. software form driven selections, a store display device with menus providing choices, and the like). Base ingredients 280 (single or multiple ingredient fluids), are provided to produce any required cosmetic preparations, whereas an information data store 290 is provided to provide the consumer with cosmetic services. A delivery interface 300 provides the mechanism for delivering a cosmetic preparation or service. A preparation may be provided via cosmetic dispensing device (discussed below) or through a software interface (web, email, fax, and the like) for cosmetic service advice.

Fig. 4 illustrates one embodiment of a schematic for customized cosmetic device. The device 310 includes cartridges 320, a video port 330, a communications port 340, a slide selector 350, a palette of colors 360, a dispenser 370, and a surface 380

The device 310 houses one or more cartridges 320 wherein the fluids (ingredients) reside, which when combined in consumer driven quantities produce a customized cosmetic preparation 390 on a surface 380 of the device 310 or on an intermediate surface 390. Each cartridge 320 may house one or more fluids. However, as will be appreciated, the cartridges 320 housing the fluids need not be required at all, since the fluids could easily be added to reservoirs included in the device 310 (not shown in Fig. 4).

The ingredients are single or multi ingredient fluids such as waxes comprising various colors and consistencies necessary to produce a variety of cosmetic preparations, such as lipstick, eye liner, lotion, powder, mascara, and the like. The consumer provides selection and diagnostic data which will drive the required fluid quantities necessary to produce the customized cosmetic preparation 390. These selection and diagnostic data include color and product selection such as lipstick, eye liner, lotion, powder, mascara, and the like.

The consumer provides these selection data via one or more input selection or diagnostic means attached or interfaced to the device 310, such as a palette of colors 360, a slide selector 350, a video port 330, and a communications port 340. The video port 330 permits the device 310 to receive consumer selection and diagnostic data from devices

such as a video, a digital camera, a television, and the like. The communications port 340 permits the device 310 to receive consumer selection data from devices such as digital phones, computers, hand-held computing devices, wireless communication devices, and the like. Further, the communications port 340 need not be a physical connection to the device 310, rather, this port may be a wireless or infrared port. Also, the communications port 340 could be connected to a sensor, which measures color, moisture, oiliness, texture, skin sensitivity, and the like. These measurements may permit preselected algorithms to determine optimal selection data for a consumer.

Additionally, a single line LCD (not shown) may permit a consumer to enter selection and diagnostic data as a numeric value which represents product and color choices. Moreover, the communications port 340 and the video port 330 may be used by the device 310 to display to the consumer the color selections provided by the consumer. These selections are also available to the consumer via the palette of colors.

As described above, consumers may provide selection data in a variety of ways to the device 310. In fact, prepackaged selection data may be made available to a consumer via automated phone system or an internet web site where the consumer may retrieve numeric codes representing selection data necessary to generate existing market products or shades/products which are comparable to existing products. In this way, the consumer may produce on an as needed basis cosmetic product mimicking name-brand products. Further, these selections may be provided in advertising material for the name-brand products.

Once the consumer has selected his/her color and product, the device 310 will calculate the appropriate fluid quantities needed to produce the customized cosmetic preparation 390. The fluids are then appropriately dispensed from the cartridges 320, mixed or heated as needed to permit discharge from the device 310, and deposited through a dispenser 370 onto an intermediate surface 400 or a surface 380 attached to the device 310. The dispenser 370 may use a controlled dispensing technology such as pressure spraying, twin-fluid spraying, electrostatic spraying, mechanical screw extrusion, piezo electric spraying, sputtering technology, and the like. The deposited customized cosmetic preparation 390 may exit the device 310 in a number of forms such as a spray, a dollop, or a coating.

Fig. 5 illustrates one embodiment of a schematic for an alternative customized cosmetic device. In Fig. 5, a cosmetic device 410 is depicted wherein the device 410 is horizontal and detached from a surface 420. Such a device 410 would permit easy attachment to a wall in a consumer's home and make more efficient use of available counter space in a consumer's home.

Similar to the device of Fig. 4, cartridges 430 housing the fluids are provided and, the customized cosmetic preparation 440 are discharged from the device 410 through a dispenser 450. Moreover, the customized cosmetic preparation 440 is capable of being directly discharged onto an intermediate surface 460, such as a lipstick applicator. Although not shown in Fig. 5, a consumer input selection means may be provided in a variety of ways as discussed with Fig. 4. Further, consumer selection and diagnostic data may be displayed to the consumer prior to discharging the customized cosmetic preparation 440.

Fig. 6 illustrates one embodiment of an internal schematic for a customized cosmetic device. The internal schematic view more particularly depicts a metering device of a customized cosmetic preparation device 470 and the dispenser 480. The metering device illustrates how the fluids are combined in varying quantities to produce a customized cosmetic preparation 490 on a surface 500. Fig. 6 also illustrates how the fluids are discharged from the device 470 through a dispenser 480. The cosmetic device 470 may include a microprocessor 510, a data bus 520, cartridges 530, a piping system 540, a mixer 550, a heater 560, an ejector 570, and a dispenser 480.

After selection and diagnostic data are received by the microprocessor 510 in device 470, signals are sent to the cartridges 530 via a data bus 520. The signals drive the cartridges 530 to release the fluids in the appropriate quantities which are dictated by the selection and diagnostic data input to the microprocessor 510. The microprocessor 510 uses calculations, which are well known to one skilled in the art, for producing a formula which selects the appropriate quantities of the fluids contained in the cartridges 530. The fluids include dyes such as Cyan, Magenta, Yellow, and the like, and pigments such as titanium, iron oxides, ultramarine blue, and the like permitting color customization. Further, the fluids also include waxes, sun screens, moisturizers, perfumes, anti-wrinkling and anti-aging agents, skin agents, cleansing agents, conditioners, and the like.

Once the appropriate quantities of the fluids are released from the cartridges 530, they are pushed through a piping system 540 which allows movement of the fluids from the cartridges 530 to the dispenser 480. The fluid movement may be achieved by using gravity but, movement may be accomplished through any mechanical means, such as a screw extruder, and the like.

Upon exiting the cartridges 530, the fluids may be mixed using a mixer 550 or heated using a heater 560. Mixing may occur by using a static micromixer which is available from the Institute of Microtechnik (Maniz, Germany). The heater 560 enhances the fluidity of the fluid when the fluid includes wax-like ingredients. Moreover, the mixer 550 releases the mixed fluids into an ejector 570. The ejector 570 is mobile, which permits uniform dispensing of the customized cosmetic preparation 490 onto a surface 500 through the dispenser 480. As previously discussed, the dispenser 480 may be implemented using any one or combinations of controlled dispensing technologies such as pressure spraying, twin-fluid spraying, electrostatic spraying, mechanical screw extrusion, piezo electric spraying, sputtering technology, and the like.

Fig. 7 illustrates one embodiment of an internal schematic view for a customized cosmetic device. The cosmetic device 580 includes a microprocessor 590, a data bus 600, cartridges 610, a piping system 620 for moving the fluid from the cartridges 610, and a dispenser 630.

Again in Fig. 7, the microprocessor 590 receives selection and diagnostic data which is used to drive the microprocessor 590 to issue commands through a data bus 600, causing specific quantities of the fluids contained in the cartridges 610 to be released into the piping system 620. However, in Fig. 7 the fluids of device 580 are not combined to form a customized cosmetic preparation 640 on a surface 650, until the fluids are accumulated on the surface 650 and have exited the device 580 through a dispenser 630. Moreover, the device 580 includes a dispenser 630, which travels back and forth by the action of a step motor (not shown) in response to commands issued from the microprocessor 590. This motion of the dispenser 630 allows control of the placement of the fluids on the surface 650 and creates color perceptions similar to those obtained, by way of example, from ink-jet printing dyes on a paper medium.

Furthermore, as will be appreciated by one skilled in the art the devices of Figs. 4-7 need not have cartridges housing the fluid ingredients, as fluid reservoirs may be built directly into these devices obviating the need for any cartridges. Further, the devices depicted in Figs. 4-7, could be modified to be a kiosk which is available to a consumer for use in a variety of environments wherein the consumer directly operates and pays to use the devices.

The foregoing description of the preferred embodiment of the invention has been presented for purposes of illustration and description. It is not intended to be exhaustive nor to limit the invention to the precise form disclosed. Many alternatives, modifications, and variations will be apparent to those skilled in the art in light of the above teaching. Accordingly, this invention is intended to embrace all alternatives, modifications, and variations that fall within the spirit and broad scope of the attached claims.

## WHAT IS CLAIMED IS:

1. A method of providing personalized cosmetics, comprising:  
acquiring cosmetic diagnostic data from a consumer while the consumer is in a private setting;  
providing cosmetic evaluation data to the consumer based on cosmetic diagnostic data; and  
delivering at least one of a cosmetic preparation and a cosmetic service to the consumer.
2. The method of claim 1, wherein the acquiring cosmetic diagnostic data includes measuring a skin surface of the consumer to obtain at least one color data, spectral data, texture data and skin condition data.
3. The method of claim 1 further comprising receiving from the consumer a final selection prior to the delivering step.
4. The method of claim 1, wherein the private setting is at least one of:  
a consumer's home;  
a consumer operated cosmetic dispensing device; and  
a non-retail establishment.
5. A method of purchasing cosmetic preparations comprising:  
receiving cosmetic diagnostic data from a consumer;  
producing a customized cosmetic preparation based on the cosmetic diagnostic data;  
receiving a payment from the consumer; and  
dispensing the customized cosmetic preparation.



6. The method of claim 10, wherein the receiving cosmetic diagnostic data includes acquiring the cosmetic diagnostic data via one or more questions asked of the consumer.
7. The method of claim 10, wherein the receiving cosmetic diagnostic data includes measuring at least one of a skin attribute data, an environmental attribute data, a health attribute data, and a consumer preference data.
8. A system of providing customized cosmetics, comprising:
  - a cosmetic diagnostic device;
  - a cosmetic evaluation device;
  - a cosmetic delivering device operative to deliver at least one of a customized cosmetic preparation and a cosmetic advice data to a consumer using diagnostic data acquired from the cosmetic diagnosis device and processed by the cosmetic evaluation device which produces at least one of the customized cosmetic preparation and the cosmetic advice data.
9. The system of claim 19, further comprising:
  - a customized cosmetic dispensing device operative to produce the customized cosmetic preparation.
10. A method of providing personalized cosmetics, comprising:
  - receiving directly from a consumer cosmetic diagnostic data;
  - providing cosmetic evaluation data to the consumer based on the cosmetic diagnostic data; and
  - delivering at least one of a cosmetic preparation and a cosmetic service directly to the consumer.
11. The method of claim 26, wherein the cosmetic preparation is at least one of a lipstick, a foundation, a mascara, a shampoo, a fragrance, an eye shadow, a nail polish, a

powder, a lotion, a hair dye, a cleanser, a conditioner, a sun screen, a skin cream, a vitamin, a hair spray, a mousse, and a blush.

1/7

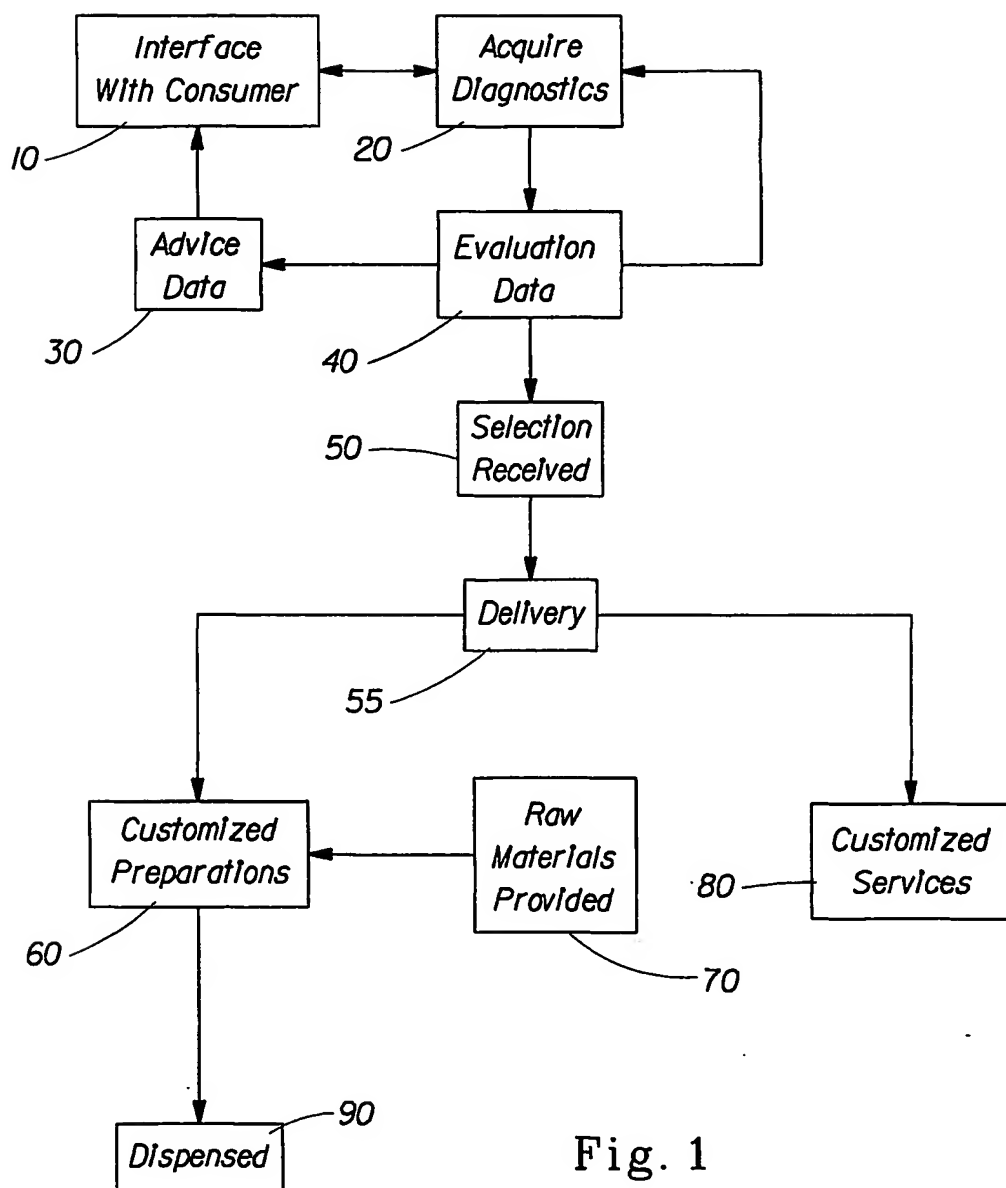


Fig. 1

2/7

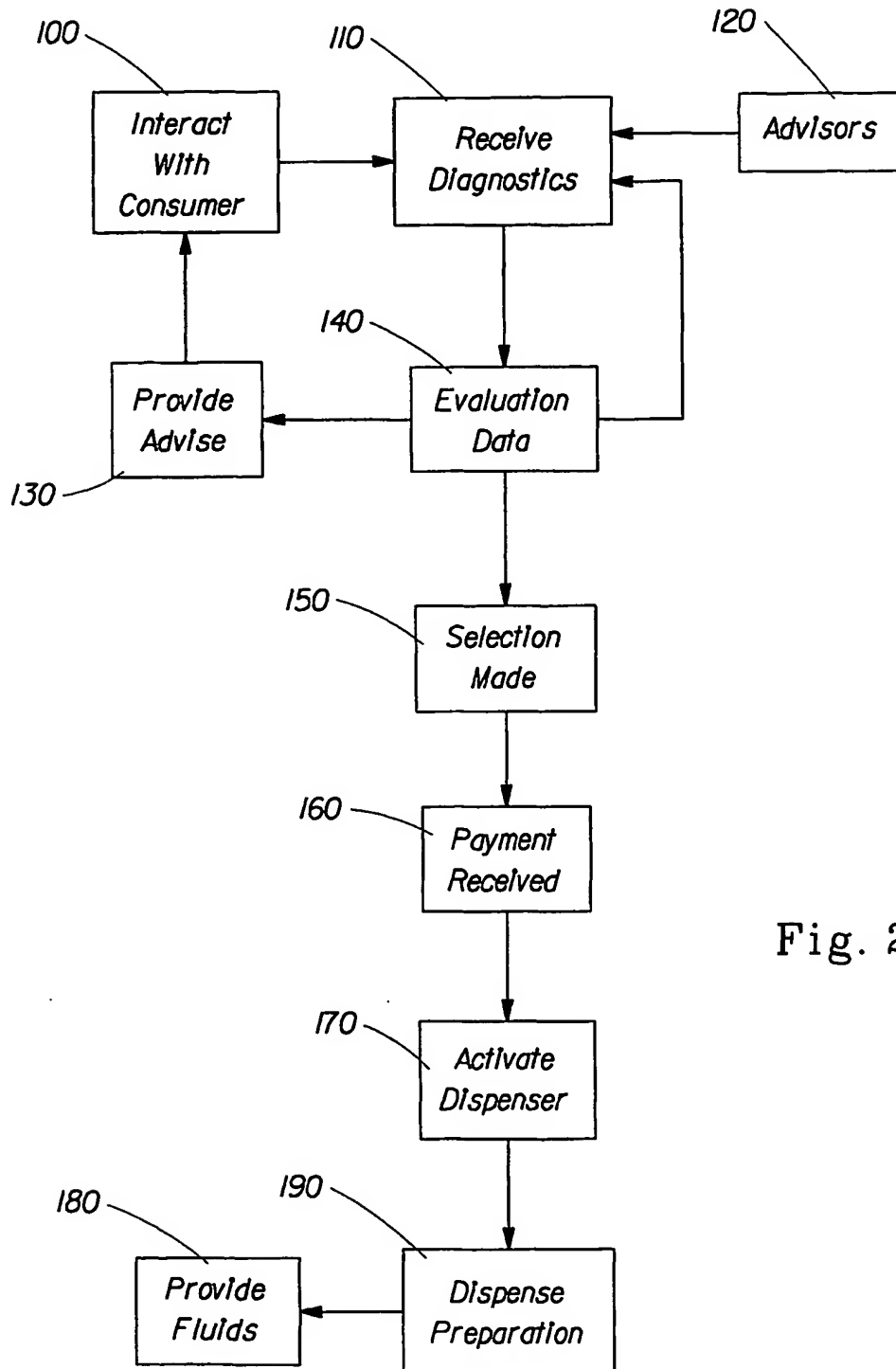


Fig. 2

3/7

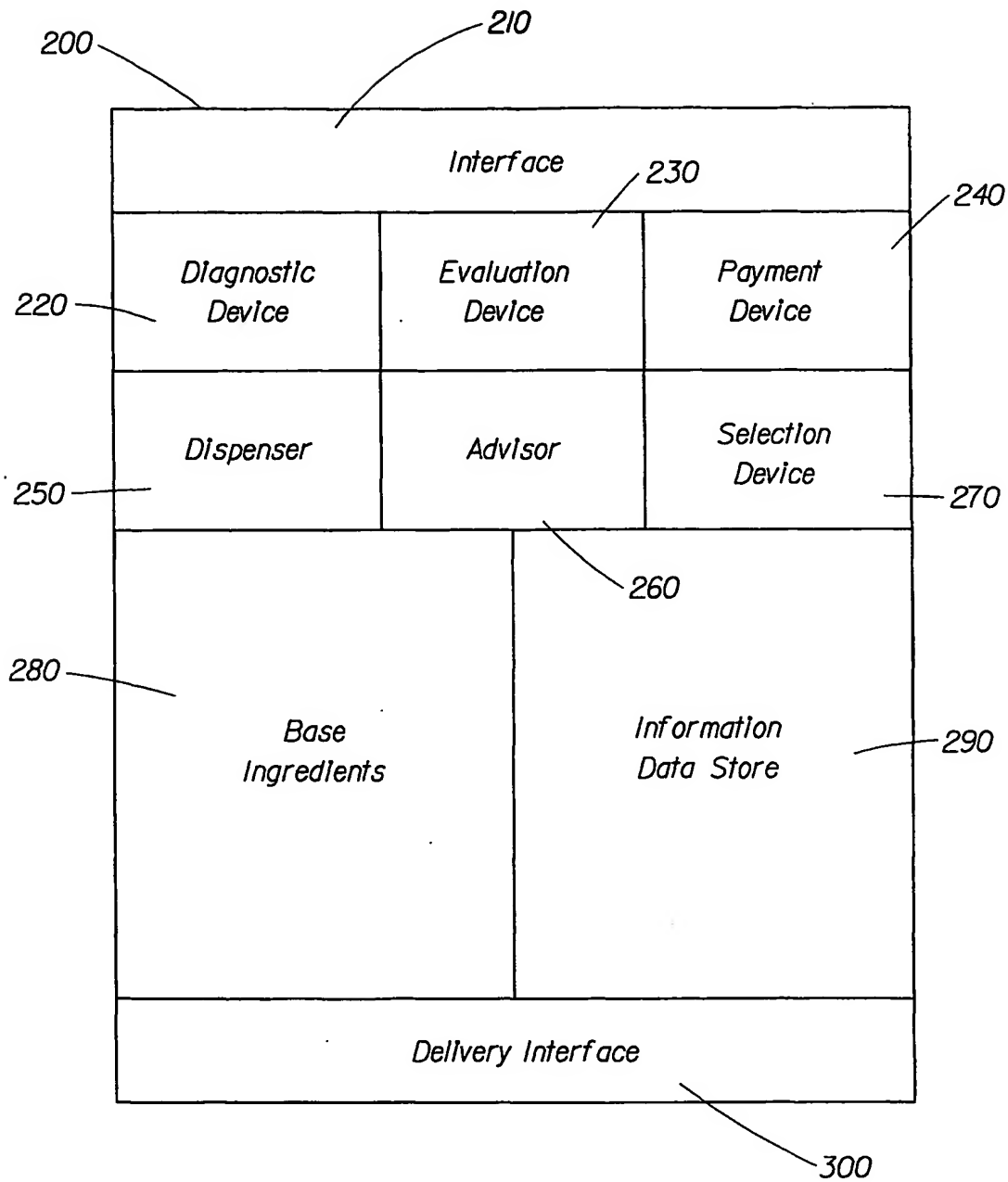


Fig. 3

4/7

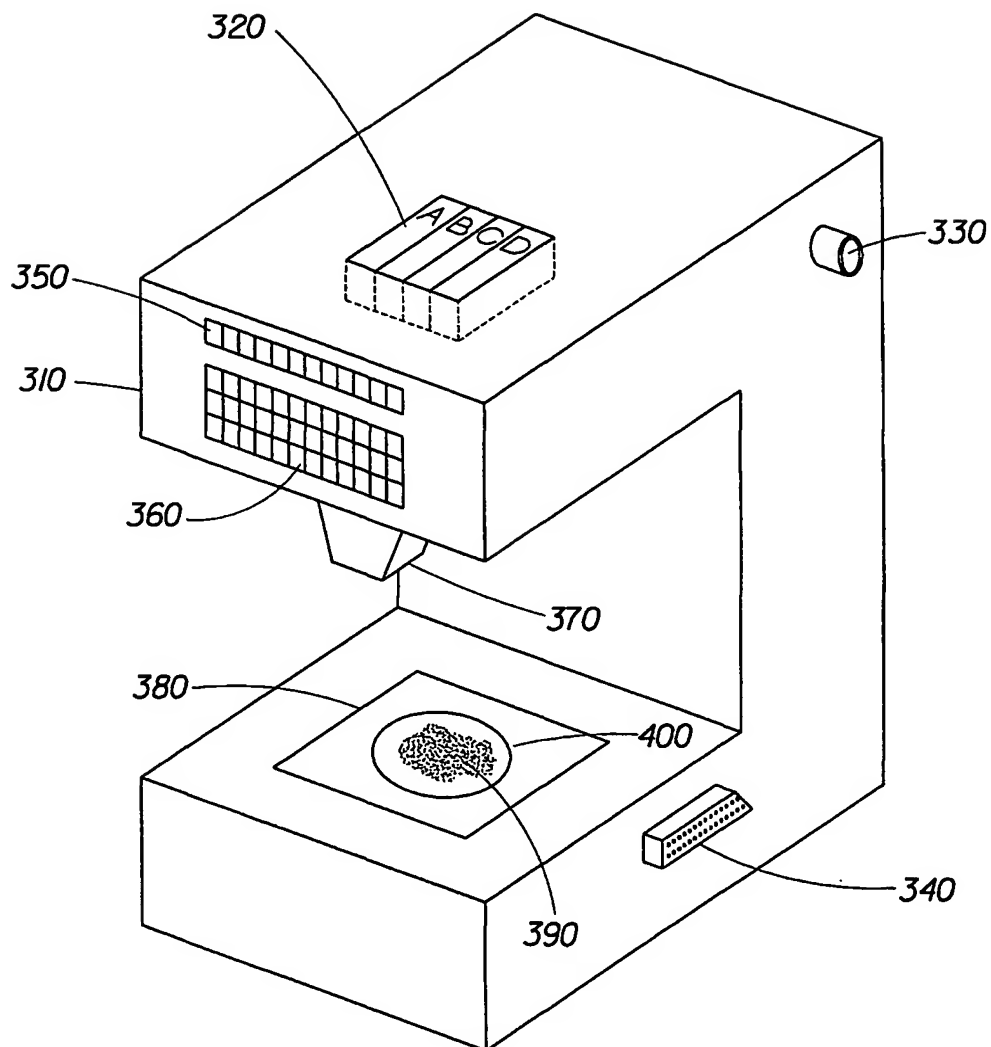


Fig. 4

5/7

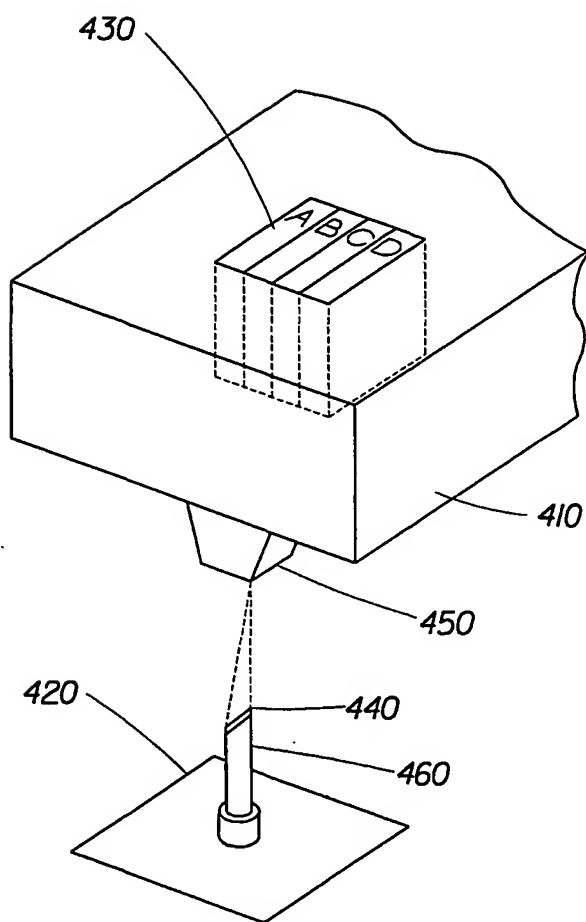


Fig. 5

6/7

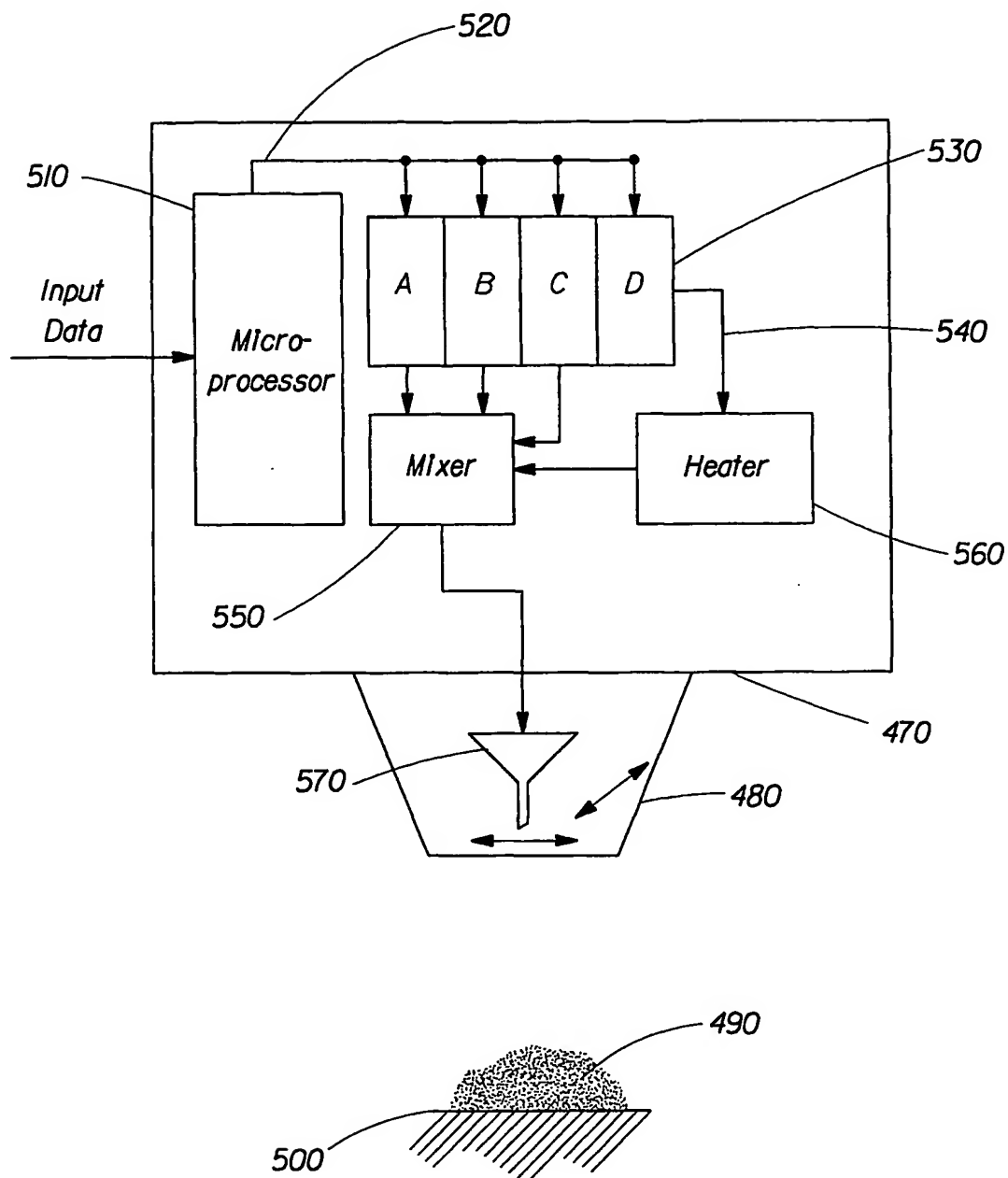


Fig. 6



7/7

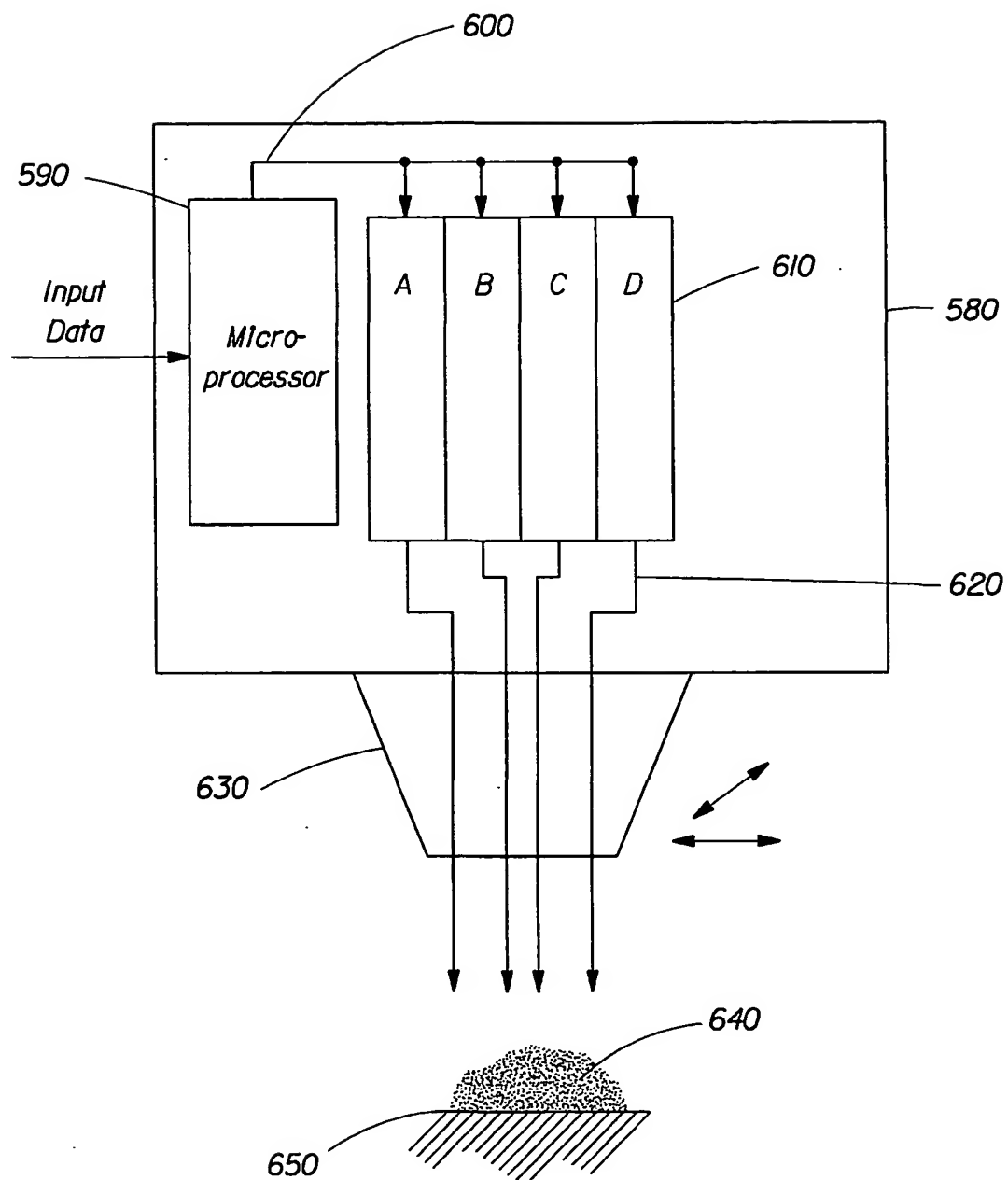


Fig. 7

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**